Amendments to and Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (previously presented): A method for achieving charge normalization when stimulating tissue using a neural stimulation implant system having multiple electrodes, comprising:

determining a threshold neural response elicited from application of at least one stimulus having a known amplitude and pulse width to a first electrode of the multiple electrodes;

determining the charge associated with the stimulus that produced the threshold neural response at the first electrode where the stimulus was applied; and

setting the program levels of the stimuli applied by the implant system during its operation to others of the multiple electrodes to stimuli having approximately the same charge as the charge of the stimulus that produced the threshold neural response at the first electrode where the stimulus was first applied, whereby charge normalization of the applied stimuli to all of the multiple electrodes is achieved.

Claim 2 (original) The method of Claim 1 wherein determining a threshold neural response comprises

applying a multiplicity of stimuli, each applied stimuli having a different intensity level associated therewith,

measuring a corresponding neural response associated with application of each one of the multiplicity of stimuli,

defining a data point for each applied stimulus and its corresponding neural response, thereby defining a multiplicity of data points, and

analyzing the multiplicity of data points to determine the threshold neural response.

Claim 3 (original) The method of Claim 2 wherein measuring a corresponding neural response associated with application of each one of the multiplicity of stimuli comprises

measuring a first peak N1 of one polarity of a neural response, and measuring a second peak P1 of an opposite polarity of the neural response, and determining the measured neural response to be the N1-P1peak-to-peak difference.

Claim 4 (original)   The method of Claim 3 wherein analyzing the multiplicity of data points to determine the threshold neural response comprises:

   plotting the multiplicity of data points on a graph, wherein the intensity level of the applied stimulus comprises a first axis of said graph, and the measured neural response associated with the applied stimulus comprises a second axis of said graph;

   fitting a data line to the multiplicity of data points plotted on the graph;

   determining an intersection point at which an extrapolation of the data line intersects with the first axis of the graph; and

   setting the threshold neural response as the intersection point.

Claim 5 (original)   The method of Claim 4 wherein fitting a data line to the multiplicity of data points comprises fitting a straight line to the multiplicity of data points.

Claim 6 (original)   The method of Claim 2 wherein applying a multiplicity of stimuli, each applied stimuli having a different intensity level associated therewith, comprises applying stimuli having different pulse amplitudes and a fixed pulse width, and wherein determining the charge associated with the stimulus that produced the threshold neural response comprises multiplying the amplitude of the threshold neural response by the fixed pulse width.

Claim 7 (original)   The method of Claim 2 wherein applying a multiplicity of stimuli, each applied stimuli having a different intensity level associated therewith, comprises applying stimuli having different pulse widths and a fixed pulse amplitude, and wherein determining the charge associated with the stimulus that produced the threshold neural response comprises multiplying the pulse width of the threshold neural response by the fixed pulse amplitude.

Claim 8 (cancelled)

Claim 9 (cancelled)

Claim 10 (previously presented)   A neural stimulation system comprising an implantable pulse generator, an electrode array having multiple electrodes attached to the pulse generator, and control circuitry for controlling operation of the implantable pulse generator so that charge normalization is achieved, wherein the control circuitry includes:

      means for determining a threshold neural response elicited from application of at least one stimulus having a known amplitude and pulse width to a first electrode of the multiple electrodes;

      means for determining the charge associated with the stimulus that produced the threshold neural response at the first electrode where the stimulus was applied; and

      means for setting the program levels of the stimuli applied by the implant system during its operation to others of the multiple electrodes to stimuli having approximately the same charge as the charge of the stimulus that produced the threshold neural response at the first electrode where the stimulus was first applied, whereby charge normalization of the applied stimuli to all of the multiple electrodes is achieved.

Claim 11 (original)   The neural stimulation system of Claim 10 wherein the means for determining a threshold neural response comprises

      means for applying a multiplicity of stimuli, each applied stimuli having a different intensity level associated therewith,

      means for measuring a corresponding neural response associated with application of each one of the multiplicity of stimuli,

      means for defining a data point for each applied stimulus and its corresponding neural response, thereby defining a multiplicity of data points, and

      means for analyzing the multiplicity of data points to determine the threshold neural response.

Claim 12 (original)   The neural stimulation system of Claim 11 wherein the means for measuring a corresponding neural response associated with application of each one of the

multiplicity of stimuli comprises means for measuring a first peak N1 of one polarity of a neural response, and means for measuring a second peak P1 of an opposite polarity of the neural response, and means for determining the measured neural response to be the N1-P1peak-to-peak difference.

Claim 13 (original)   The neural stimulation system of Claim 11 wherein the means for analyzing the multiplicity of data points to determine the threshold neural response comprises:

means for plotting the multiplicity of data points on a graph, wherein the intensity level of the applied stimulus comprises a first axis of said graph, and the measured neural response associated with the applied stimulus comprises a second axis of said graph;

means for fitting a data line to the multiplicity of data points plotted on the graph;

means for determining an intersection point at which an extrapolation of the data line intersects with the first axis of the graph; and

means for setting the threshold neural response as the intersection point.

Claim 14 (original)   The neural stimulation system of Claim 13 wherein the means for fitting a data line to the multiplicity of data points comprises means for applying a linear-regression line to the multiplicity of data points.

Claim 15 (original)   The neural stimulation system of Claim 10 wherein the neural stimulation system comprises an implantable cochlear stimulation system.

Claim 16 (original)   The neural stimulation system of Claim 10 wherein the neural stimulation system comprises a spinal cord stimulation system.

Claim 17 (currently amended)   The ~~neural stimulation system~~ method of Claim 1 wherein the pulse width is between 11 μs and 75 μs.

Claim 18 (previously presented)   The neural stimulation system of Claim 10 wherein the pulse width is between 11 μs and 75 μs.

Claim 19 (previously presented)   The method of Claim 1, wherein:

> determining the threshold neural response comprises:

>> measuring a plurality of neural responses elicited from a corresponding plurality of applied stimuli, each applied stimuli having a different intensity level associated therewith; and

>> determining a tNRI value from the measured plurality of neural responses;

> determining the charge associated with the stimulus comprises:

>> determining the charge level associated with the tNRI value, where charge level is defined as pulse width X pulse amplitude; and

> setting the program levels comprises:

>> setting the programmed levels used by the cochlear implant system to stimuli having approximately the same charge as the charge associated with the tNRI value.

Claim 20 (currently amended)   The method ~~for fitting~~ of Claim 19 wherein determining a tNRI value comprises:

> plotting the measured neural responses as data points on a graph having the applied stimuli as a first axis and the measured neural response as a second axis,

> making a straight line approximation of the plotted data points, and

> determining the tNRI value as the value corresponding to the intersection of the straight line approximation of the plotted data points with the first axis.